

### **REMARKS**

Claims 1, 2, 7, and 8 have been amended. Claims 1-9 are now pending in this application. Support for the amendments is found in the existing claims and the specification as discussed below. Accordingly, the amendments do not constitute the addition of new matter. Applicant respectfully requests the entry of the amendments and reconsideration of the application in view of the amendments and the following remarks.

#### **Telephonic interview**

Applicant's representative would like to thank Examiner Wilder for the helpful telephonic exchange which is summarized on page 4 herein.

#### **Rejection under 35 U.S.C. § 103(a)**

Claims 1-2 and 7-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Shuldiner, et al. in view of Hiratsuka, et al.

The Examiner has stated that "Shuldiner, et al. provides a probe nucleotide sequence that is 100% identical to the sequences of SEQ ID NO: 11 and 12....An alignment of this sequence with the sequence of SEQ ID NO: 1 shows that this sequences begins at nucleotide 183 of SEQ ID NO: 1" (Final Office Action, page 5).

The claims are now limited to probes corresponding to SEQ ID NO: 2 (claims 1 and 7) and specifically, SEQ ID NO: 8 (claims 2 and 8). Furthermore, the claims are directed to where the label is specifically at a nucleotide corresponding to position 196 of SEQ ID NO: 2 as the claims specify that the probe ends at position 196 and that the 3' end is labeled with the fluorescent dye. Although the length may vary from 7 to 30 nucleotides, the labeled end is fixed at a nucleotide which corresponds to position 196 of SEQ ID NO: 2 which is labeled with a fluorescent dye.

The Examiner also states that "the claim does not require that a cytosine be present at position 183" (Final Office Action, page 5). For the claims as amended, the claims refer to position 196 of SEQ ID NO: 2 which is unequivocally a cytosine residue.

Among the many cytosines that could be labeled for detection of  $\beta$ 3 adrenaline receptor mutations, the cytosine at 196 of SEQ ID NO: 2 is critical for detecting the Trp64Arg mutation by Tm analysis. When probes as claimed are used, which have cytosine at the 3' end (position 196), changes in fluorescence intensity that could be analyzed by Tm analysis were observed.

However, when probes having cytosine other than cytosine 183 or 196 at the 5' or 3' end, respectively, were used, changes in fluorescence intensity were not observed (see specification, page 12, first 5 lines of text).

Shuldiner, et al. fail to teach the specific probes claimed by Applicant and fail to teach the criticality of nucleotide 196 as claimed by Applicant. Shuldiner, et al. do not teach or suggest that the cytosine at position 196 should correspond to the 3' end of the probe.

This deficiency is not corrected by Hiratsuka, et al. Hiratsuka, et al. disclose a probe labeled with fluorescence tag and a method for detecting single nucleotide polymorphisms by using the probe. However, Hiratsuka, et al. do not teach the specific probes claimed or labeling at position 196 in the probes as claimed.

In view of Applicant's amendments and arguments, reconsideration and withdrawal of the above ground of rejection is respectfully requested.

**Rejection under 35 U.S.C. § 103(a)**

Claims 3-6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hiratsuka, et al. in view of Shuldiner, et al.

The arguments presented above to rebut Shuldiner, et al. in view of Hiratsuka, et al. are incorporated here by reference.

As described in the first paragraph on page 12 of the present specification, only when the probe labeled at the nucleotide number 183 or 196 is used, changes in fluorescence intensity that could be analyzed in Tm analysis were observed. Claims 3-6 depend from claim 1 and are limited to probes ending at a position corresponding to position 196 of SEQ ID NO: 2 and labeled at position 196 with a fluorescent dye. Neither Hiratsuka, et al. nor Shuldiner, et al. teach or suggest the probe of claim 1 as amended. It was not obvious from the FRET- based analysis described in Hiratsuka, et al. that "the nucleic acid probe [having] a nucleotide sequence ending at the nucleotide number 196 in the nucleotide sequence of SEQ ID NO: 2 and [having] a length of 7 to 30 nucleotides, and the 3' end (the nucleotide number 196) of the probe is labeled with the fluorescent dye" (claims 1 and 7) can be used for the method of detecting a mutation in a  $\beta_3$  - adrenergic receptor by Tm analysis.

In view of Applicant's amendments and arguments, reconsideration and withdrawal of the above ground of rejection is respectfully requested.

**No Disclaimers or Disavowals**

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, the Applicants are not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. The Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that the Applicants have made any disclaimers or disavowals of any subject matter supported by the present application.

**Co-Pending Applications of Assignee**

Applicant wishes to draw to the Examiner's attention to the following co-pending applications of the present application's assignee. Application in **bold** is the above-referenced application.

<b>Serial Number</b>	<b>Title</b>	<b>Filed</b>
09/817,251	METHOD FOR STIRRING LIQUIDS	03/27/01
10/466,453	QUANTITATIVE ANALYZING METHOD AND QUANTITATIVE ANALYZER USING SENSOR	12/02/03
10/481,397	INFORMATION COMMUNICATION SYSTEM	12/19/03
10/483,205	ADJUSTABLE LANCING DEVICE	01/07/04
10/493,919	TEST APPARATUS	04/27/04
10/862,465	METHOD AND IMPLEMENT FOR OPENING HOLE IN SOFT MATERIAL	06/08/04
10/498,782	SAMPLE MEASURING DEVICE	06/10/04
10/533,601	ANALYTICAL TOOL	04/29/05
10/545,852	METHOD OF DETECTING CHLAMYDIA TRACHOMATIS AND KIT THEREFOR	08/17/05
10/547,354	DNA AMPLIFICATION METHOD AND KIT THEREFOR	08/29/05
11/220,622	SUPPLEMENT FOOD FOR LOW BLOOD GLUCOSE RECOVERY	09/08/05

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10/553,576	METHOD OF DETECTING OR QUANTITATIVELY DETERMINING MITOCHONDRIAL DNA 3243 VARIATION, AND KIT THEREFOR	10/17/05
10/536,822	METHOD AND APPARATUS FOR CONCENTRATION AND PURIFICATION OF NUCLEIC ACID	10/18/05
<b>10/553,509</b>	<b>METHOD OF DETECTING B3 ADRENALINE RECEPTOR MUTANT GENE AND NUCLEIC ACID PROBE AND KIT THEREFOR</b>	<b>10/18/05</b>
10/553,614	METHOD OF DETECTING PANCREATIC ISLET AMYLOID PROTEIN MUTANT GENE AND NUCLEIC ACID PROBE AND KIT THEREFOR	10/18/05
10/553,376	METHOD OF ISOLATING NUCLEIC ACIDS, AND KIT AND APPARATUS FOR NUCLEIC ACID ISOLATION	10/19/05
10/536,829	DEVICE FOR PRETREATING SPECIMEN	10/31/05
10/550,671	PROCESS FOR PRODUCING GLUCOSE DEHYDROGENASE	11/09/05
11/587,333	MUTANT GLUCOSE DEHYDROGENASE	10/19/06
11/712,307	METHOD FOR DETECTING TARGET NUCLEIC ACID	02/27/07
11/665,296	MUTANT GLUCOSE DEHYDROGENASE	04/13/07

### **CONCLUSION**

In view of Applicants' amendments to the claims and the foregoing Remarks, it is respectfully submitted that the present application is in condition for allowance. Should the Examiner have any remaining concerns which might prevent the prompt allowance of the application, the Examiner is respectfully invited to contact the undersigned at the telephone number appearing below.

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Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

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By: Che S. Chereskin  
Che Swyden Chereskin, Ph.D.  
Registration No. 41,466  
Agent of Record  
Customer No. 20,995  
(949) 721-6385

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